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The Septic Tank—Soil Absorption System

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Continued development in California of subdivisions without community sewage facilities has made it necessary for the state and local health departments to keep careful watch on individual sewage disposal systems. To gain the latest information resulting from experimentation and study of this subject in various parts of the Country, the State Department of Public Health recently sent the author to Cincinnati to a seminar sponsored by the U. S. Public Health Service. This article summarizes that seminar and makes reference to experiences in California.

There was a time not so long ago when the advantages of modern plumbing were limited to city living. Happily, this is no longer true. The privy is rapidly disappearing from the American landscape. With the advent of rural electrification, resulting in running water in the home, and the availability of public water in fringe areas, modern plumbing conveniences are now common in country living. Since many of these rural and semirural areas cannot be economically served by community sewage collection and disposal systems, the demand for better living conditions has necessitated individual water carriage waste disposal systems.

The automobile and good roads have been other factors in stimulating the average city dweller to move to the country and enjoy uncrowded living conditions. Thus the use of the individual household septic tank-soil absorption system has grown rapidly in the last few years. The U. S. Public Health Service estimated that in 1945 there were 4,400,000 septic tank-soil absorption systems serving 17,000,000 people in the United States, and these figures have no doubt increased sharply with postwar home construction.

In California it has been estimated there are about 350,000 individual systems serving approximately 1,000,000 people. The Federal Housing Administration indicates that in California, as in the United States, about one-half of all new homes being built with FHA financing are dependent upon individual systems for sewage disposal.

The objective of a septic tank-soil absorption system is the safe and convenient disposal of human and other domestic wastes. While many septic tanks operate satisfactorily year after year, many systems fail, some after a relatively short period of time. The question is, "Why do they fail?" A few causes are: poorly designed septic tanks, inadequate soil absorption fields, nonreceptive soil, poor installation, lack of maintenance, and the dumping of unreasonable amounts of harmful chemicals into the septic tank system. All of these causes of failure can be avoided by proper design, proper installation in an adequate soil, and proper maintenance and operation. Although the septic tank-soil absorption system can give many years of satisfactory service, the best answer to the individual household sewage problem is still a connection with a municipal system whenever possible.

A CENTURY OF SEPTIC TANKS

First use of the septic tank is credited to John Louis Mouras. In 1860 in the town of Vesoul, France, Mouras constructed a small masonry tank to collect household sewage, kitchen wastes and rain water from a small home. Overflow from the tank discharged to a cesspool. Twelve years later the masonry tank was opened. It contained much less solids than was expected. This resulted in a series of experiments made in collaboration with Abbe Moigno, a scientific authority of his time. The successful completion of these

tests induced Mouras to patent his tank in September, 1881.

In the United States the first known use of the household septic tank was in 1883. It was a two-compartment, round, vertical tank designed by Edward S. Philbrick of Boston. Acceptance of this method of waste disposal became widespread, but, unfortunately, little attention was given to its technical development until recent years.

In the 1920's a number of state universities and several state health departments began experimental studies of septic tank operation and design. The sum of all this experimentation had not established a firm basic factual foundation for septic tank design when the Public Health Service became interested in this problem about 1946. Many other investigators at this time initiated studies in the individual household disposal problem. The weakness in basic knowledge is now being given more serious consideration than at any time during the 70-year history of septic tank use in the United States.

THE SEPTIC TANK IN USE

A septic tank receives household wastes from the kitchen, bathroom and laundry, and must be large enough to provide for one or two days' detention time. It is usually a rectangular or circular tank of about 500 to 1,000 gallons capacity (for the average household), placed underground somewhere near the house. The California State Department of Public Health recommends a minimum size of about 800 gallons.

The three functions of a septic tank are:

(1) To settle sewage.
(2) To digest solids.
(3) To store solids.

Water waste from the house contains some solid material. A portion of the solids entering the septic tank is heavier than water and sinks to the bottom as sludge. The remaining portion floats and is called scum. Almost immediately the scum and sludge begin to decompose by the action of bacteria naturally present in all sewage. This decomposition or digestion process changes part of the solid material into liquid and gas. The solids remain in the tank while the gas is vented to the atmosphere, usually through the house vent, and the liquid flows out of the tank to the soil absorption system.

The septic tank must be of the proper size and shape to provide storage for the sludge and scum and to provide a quiescent flow of liquid through the tank to obtain maximum efficiency of settling. A properly designed tank will remove 60 to 80 percent of the suspended solids present in the influent sewage. This does not mean that the effluent is pure. Very little of the dissolved organic material and very few disease bacteria are removed by settling. The effluent should, therefore, not be discharged into a stream or a lake or to the surface of the ground. Such a procedure could cause a health hazard and an odor nuisance. For these reasons, septic tank effluents should be disposed underground through a disposal field of some type.

RESEARCH POINTS UP FUNDAMENTALS

A tabulation by the Public Health Service of septic tank recommendations of state health departments revealed a wide variance in design for septic tanks and a lack of basic knowledge on this subject. The range in allowable capacity varied from 300 gallons in some states to 1,000 gallons, and with considerable variance in shape. Some recommended a one-compartment tank and others two. The data was useful to the PHS as a starting point in their research program on the septic tank-soil absorption system.

Results of research over the past six years have led the Public Health Service to make some recommendations based on sound fundamentals. Eighteen full-sized septic tanks were operated under parallel conditions for periods up to one year during the first phase of the study. Subsequent studies used an adequate number of "revamped" tanks for a sufficient length of time to obtain satisfactory data.

For tanks of equal volume, the effect of shape on the efficiency of suspended solids removal is negligible. Five tanks of varying shapes were used in this test and the results in percent of suspended solids removed ranged from 59 to 65 percent. All five of these tanks had only one compartment. At the same time, two tanks of 550 and 670 gallon capacity and having two compartments were operated under the same conditions as the five tanks. These had a suspended solids removal efficiency of 78 and 84 percent. Roughly this is 20 percent above the single-compartment tank results.

Further tests on compartmentation led to the conclusion that two-compartment tanks gave best results, and that the inlet compartment should be twice the size of the outlet compartment. In another test, the merits of tanks of equal capacity and varying depths of 28.5 inches, 36 inches, 48 inches, and 60 inches were determined. No significant difference was found, although the shallow tank had a slightly better performance record. More data are needed before the effect of depth can be determined.

Several exploratory trials of inlet, outlet and intercompartment appurtenances were made, using detention time as the criterion of performance. These pre-

liminary experiments indicated that the inlet fitting had little effect upon the detention time in the tank. For the intercompartment and the outlet fixtures, the inverted U between compartments and a T outlet gave better detention than the slot or hole between compartments and the baffle at the outlet. This study is being continued.

The average quantity of sludge and scum that a septic tank accumulates over a period of the first six years (assuming no garbage grinder in the home) was found to be 24.7, 31.5, 38.4, 45.6, 53.5, and 61.8 gallons per person. It is noted that the total accumulation at the end of the second year (31.5 gallons) was not twice the first year's accumulation, but only 1.27 times. At the end of six years the total accumulation was only 2.5 times the first year's accumulation. The rate of accumulation of sludge and scum expressed in gallons per person per year was 24.7, 15.8, 12.8, 11.4, 10.7, and 10.3. Beyond six years the rate of accumulation remained approximately constant at 10.3 gallons per year. The decrease in rate is probably caused by digestion and compaction.

These accumulation figures are an aid in designing a tank for adequate size and in determining approximately how often the tank should be cleaned. Still, the best method of determining the depth of scum and sludge is to open the tank and actually measure the depth.

Size is an important factor in septic tank design. The larger tanks provide a longer detention time, a quieter flow through the tank, greater sludge and scum storage capacity, and higher operating efficiency. Increased storage capacity results in greater intervals of time between cleanings. It has been estimated, for example, that a 750-gallon tank costs only 30 percent more than a 500-gallon tank, but the interval between cleanings is doubled. Cleaning is an expensive item and has to be considered. The USPHS recommends that one should not skimp on size when building a septic tank.

MODERN FACTORS AFFECT DESIGN

Within the past few years industry has been busy developing new things for the modern household such as automatic washing machines, garbage grinders, water softeners, and detergents. These improvements have changed the composition of sewage that enters the septic tank. This change has also necessitated a modification in design of the septic tank and the absorption field.

Garbage grinders have increased the amount of solids present in sewage. A larger storage space must be provided or the septic tank must be cleaned at more frequent intervals. An increase of 50 percent in the size of the septic tank is the practical solution to this problem. Ground garbage is digested without difficulty in the septic tank along with sewage solids.

Often kitchen and laundry wastes bypass the septic tank and drain directly into the absorption field or into a separate drain field. This is not necessary because normal use of soap, detergents, bleaches, and zeolite water softener effluent (discharge of salt solution when recharging) do not have an inhibiting effect upon septic tank action. Actually, the septic tank will improve the quality of these discharges in regards to their soil clogging qualities in the absorption field.

An automatic washer, as compared to a conventional washer, has no effect on septic tank operation except to increase flow of water to the tank.

SEPTIC TANKS ARE ONLY PART OF PROBLEM

So far the discussion has been entirely about septic tanks; that is only part of the problem. A system that has the best septic tank, properly designed and installed, but lacking an adequate soil absorption system, will fail. It has already been said that effluent from the septic tank is not pure since most of the organic material and harmful bacteria present in the influent remain in the effluent. This effluent overflow from the septic tank must be disposed of underground so that it will not be a health hazard to the family or community, create a nuisance, or be aesthetically objectionable. The soil absorption field must be as carefully designed as the septic tank.

ESSENTIALS OF AN ABSORPTION FIELD

A soil absorption field consists of drain tile laid in a ditch with about 12 inches of nut-sized rock in the bottom and two inches of rock over the tile and backfilled with soil. Water from the septic tank flows into the drain tile through the openings left between each piece of tile to the rock-filled trench, and finally seeps away into the surrounding soil. Through capillary action a certain portion rises through the soil and disappears by evaporation. If there are trees, shrubs, grass or other vegetation over the field, considerable water is taken up by the vegetation, used in its metabolism, and discharged to the atmosphere through the leaves.

To properly design an absorption field, a knowledge of many influencing factors is needed. It has been the custom to design the waste disposal system on the average amount of water a person uses each day. The PHS suggests that perhaps a better indication of expected water use from the home is the number of bedrooms in the house. Designing by bedrooms would

take into account the extra bedroom that might contain week-end or overnight guests.

Climate must be considered also. It influences the amount of moisture that will be removed from the soil by evaporation and by plant use. Warm climates with short winters favor high evaporation losses. In some northern states rainfall may be greater than the loss by evaporation and plant use. The size of the soil absorption field for the two extremes must of necessity be different, assuming other factors equal.

PLANNING AN INSTALLATION

When making a study of a particular area to determine the feasibility of installing a septic tank-soil absorption system there are several items to consider. One should use knowledge obtained from previous installations in the same area. Of great help are soil survey reports. These consist of a detailed soils map and an accompanying description of soil types. Part of each description is concerned with drainage and permeability characteristics of each soil type. It gives the depth of soil and underlying structure. All this helps in determining the suitability of a soil for absorption fields, and it can be done before visiting the site.

A visual inspection of the soils at the site will reveal considerable information. It is not necessary to be a trained soils man to recognize a few significant clues such as soil texture, soil structure, and soil color. All that is required is a willingness to learn and to dig in the soil.

Soil texture refers to the relative amounts of the three main classifications of soil present in a soil sample. They are sand, silt, and clay. The textural names are defined in terms of particle size as determined by mechanical analysis in the laboratory. However, texture can be roughly determined by feel. A wetted sample of soil rubbed between the fingers will feel gritty, indicating sand; or smooth and floury, indicating silt; or sticky like paste, indicating clay.

The size of the soil particle governs the size of soil pores, which in turn governs the rate of water absorption. The large particle size has the greater voids and the faster absorption rate. Textural analysis indicates a trend but is not conclusive proof of a soil's absorptive qualities. It is most reliable in sandy soils. For heavier soils, silt and clay, additional information is needed.

Another quality to look for is soil structure. This refers to the tendency of individual soil particles to group together in clusters which are more or less stable to wetting and physical breakdown. These clusters then govern the particle size, rather than the individual soil grain, and govern the voids between particles and the absorptive qualities. This phenomenon may be recognized by the manner in which a clod breaks apart. If the soil has structure, the clod will break easily along definite cleavage planes or crumble into units of uniform size. If the soil has no structure, the clod will be difficult to break apart and the cleavage will be irregular or jagged. Also, a structured soil has more stability when wet and does not puddle as easily as the nonstructured soil. Occurrence of structure in soil is a good indication that the soil will tend to have better absorption qualities than a soil having no structure.

Color is one of the most obvious and easily recognized of all soil characteristics. A bright uniform reddish-brown to yellow color throughout the soil profile is generally related to unhydrated iron oxide. Since unhydrated iron oxide is relatively unstable under moist conditions, this color indicates good drainage and aeration. If the soil profile has a color ranging from gray in the top soil to brown, yellow and gray mottled in the subsoil, it usually indicates an imperfectly and poorly drained soil.

PERCOLATION TESTS

From the septic tank history of the area, the soil maps, the textural analysis, soil structure and color, considerable knowledge has been obtained about the suitability of a given soil for an absorption field. It is still necessary to make a percolation test, which is a direct measurement of the soil absorption qualities, to determine the size of an absorption field for a given installation.

In the 1920s, Henry Ryon developed an empirical relationship between the rate at which clear water would percolate into soil and the desirable size of an absorption field in the same soil. The percolation test and the empirical relationship, with slight modifications, are the bases for the design of soil absorption systems today. The USPHS recommends that in no case should less than 150 square feet of absorption area per residence be provided.

DESIGN ALONE IS NOT ENOUGH

Both the septic tank and the soil absorption field must be designed to meet the particular requirements of the household. Good design alone will not assure a successful system. The disposal system must be correctly installed and in the best location. Such things as surface drainage, drainage from the house roof, depth to ground water, slope of ground surface, distance from a source of water supply must be considered when locating the disposal system. All of these will

determine whether or not the system will be successful.

After every item of design and installation has been considered in building the waste disposal system, the owner should not neglect his system; it requires maintenance. Most people do not take care of their waste disposal system because they do not know that maintenance is necessary. Every three to five years the septic tank must be opened and cleaned. If the tank is not cleaned when needed, the solids that normally settle out in the tank are carried into the absorption field and it soon becomes clogged. The system then fails because of negligence.

Although a community sewage disposal system is much preferred, the septic tank-soil absorption field system is making an important contribution to modern American living. If properly designed and installed, and if adequately maintained, it will provide a safe method of sewage disposal that meets the approval of public health authorities.

Fluoridation Right Upheld as Valid by Higher Courts

The Supreme Court of the State of California recently upheld the official decision of the Fourth District Court of Appeals by refusing the opponents of fluoridation a hearing in their effort to obtain an injunction against the City of San Diego to prevent the fluoridation of the water supply.

In 1951 the opponents of fluoridation had asked an injunction against San Diego City officials to keep them from fluoridating the city's water supply.

At that time the Superior Court of the State of California, in and for the City of San Diego, granted the city a nonsuit. In its motion the court stated, "it must be held that the plaintiff has not proved that the program here under attack has or will invade any of his constitutional rights, or that the carrying out of the program mentioned will in anywise injure him. On the other hand, the facts in evidence and the authorities cited herein demonstrate convincingly that the adoption of the fluoridation program here involved is a valid exercise of the police power of the city."

At a later date the Fourth District Appellate Court upheld the decision of the superior court stating, "It does not clearly appear from the evidence produced that the ordinance is a plain, palpable invasion of the rights secured to petitioner by the fundamental law, nor does it appear that it violated any policy or laws of the State of California or that by reason of the facts established the ordinance is in the respects indicated unconstitutional. The matter was one within the sound discretion of the city council. Failure of the legislature to pass any particular measure is not conclusive evidence of its policy on the subject especially where, as here, the bill as proposed contained a provision granting immunity from liability in case of damage suits arising from the addition of fluoridation to water supplies. By the granting of the authority to the State Board of Health to issue a permit under the conditions stated, the legislature has delegated to that board the duty to determine whether the water to be used is pure, wholesome, and not dangerous to life and health and its authority cannot, in this proceeding, be questioned."

The Fourth District Court of Appeals further stated, "Since the City Council had jurisdiction to act and make such a determination, and such determination being neither unreasonable nor an abuse of discretion, the trial court properly determined that it was unauthorized to review the advisability of such determination by the city council, and an order for an injunction predicated on such a ground could not be sustained."

Public Health Positions

Contra Costa County

Dental Hygienist. Salary range $341-$410. Applicants must possess valid license as a dental hygienist. Requires four-year university curriculum in dental hygiene or a two-year course and two years of practical experience, of which one year shall have been in a school, or health or welfare department dental program.

Public Health Nurse. Salary range $341-$410. Must possess public health nurse certificate issued in California, or be eligible at time of examination to receive their certificate.

Further information and applications may be obtained from the Contra Costa County Civil Service Commission, Box 710, Martinez.

City of Pasadena

Public Health Nurse. City of Pasadena has an opening for a qualified Public Health Nurse. Salary: $315-$378. Pasadena residence is not required. Apply through City of Pasadena, Personnel Department, 100 N. Garfield Ave., Pasadena 1.

Marin County

Public Health Nurse. Staff position open now with Marin County Health Department. Generalized program. California certificate required. Salary range: $305-$381. If qualified, may start above first step. Further information is available from Clarice Haylett, M.D., Health Officer, Marin County, 920 Grand Ave., San Rafael.

Napa County

Director of Public Health Nursing. Salary, $400, with membership in State Retirement Fund, and vacation and sick leave privileges. Car is required; mileage allowance is 8 cents per mile. The Napa County Department of Public Health offers a general program, including school nursing, in a semi-rural area of approximately 50,000, with a budgeted staff of 17, of whom four are public health nurses. For further information write Robert S. Westphal, M.D., Acting Health Officer, 2281 Elm St., Napa.

Sonoma County

Physical Therapist. To work in a well-organized cerebral palsy program. Salary dependent on qualifications. Write Robert S. Westphal, M.D., Sonoma County Health Officer, 3325 Chanate Rd., Santa Rosa.

Dental Survey Completed in Schools of San Francisco

A dental survey of 5,940 school children of the San Francisco Public Schools was completed in May of 1953, and the results were recently released. The survey was made to determine the dental needs of the school-age children, and also to establish a baseline from which to measure the effects of dental health education and of fluoridation in the future.

The survey was a cooperative project undertaken by the San Francisco Dental Society, the San Francisco Department of Public Health, the San Francisco Public Schools, the San Francisco Parent-Teacher Association, and the Division of Dental Health of the State Department of Public Health.

Forty-six public schools were surveyed by teams made up of representatives of the collaborating agencies. The 5,940 children examined in these schools were about 8 percent of the San Francisco public school population—a sufficiently large sample for drawing conclusions concerning the total school population of the city. The sample included children from kindergarten through high school.

The results of the survey clearly indicate that San Francisco has a dental problem of considerable magnitude, and they point up the need for using all available methods for preventing tooth decay in children. Here are some of the findings:

Each child averaged five decayed (D), missing (M), or filled (F) permanent teeth, and on the average, each child had two and one-half permanent teeth in need of filling on the day he was examined.

Tooth decay increased rapidly as the children grew older. Of the five-year-olds, 73 percent had at least one primary (baby) tooth affected by decay and 7 percent had one or more decayed, missing, or filled (DMF) permanent teeth; at age eight, 87 percent had one or more primary teeth affected by decay and 78 percent had permanent teeth affected; at 10, approximately 90 percent had permanent teeth affected; and at age 15, 97 out of every 100 had one or more DMF permanent teeth.

The DMF rate for five-year-olds was low (.1), since at that age they have few permanent teeth, but by age eight there were 2.3 DMF teeth per child, for age 10 there were 3.8 per child, and by the time five more years were added to the age-span, there were 10.2 DMF teeth per 15-year-old child. Of these four and one-half needed filling on the day of examination; one had already been lost. Less than half of the dental needs of the 15-year-old children was being met.

Distinguished Public Health Worker, Carl E. Buck, Dies in Michigan

Dr. Carl E. Buck, P.H., 1953 recipient of the Sedgwick Memorial Medal for distinguished service in public health, died in Ann Arbor, Mich., November 21. Dr. Buck is remembered particularly in California for his work as field director of the American Public Health Association, in which he was engaged in public health surveys and various types of studies in both state and local health departments in California and throughout the country. His survey in 1943 of the California State Department of Public Health resulted in considerable reorganization of the department and development to its present form. He carried out an extensive study of the department again in 1948.

At the time of his death Dr. Buck was Professor of Public Health Practice at the University of Michigan School of Public Health. Only 10 days before his death, on November 11, he had received the Sedgwick Memorial Medal from the American Public Health Association at its annual meeting in New York.

Dr. Buck was a member of the Typhus Fever Commission in its work in Serbia during World War I. He then became deputy commissioner for the Detroit Department of Health and served for a short time as acting commissioner of the Michigan State Department of Public Health.

His longest and most widely known service was as field director for A.P.H.A., during which time he conducted his public health surveys. In his work with state and local health departments across the Nation he succeeded in developing widespread use of evaluation practices.

Survey of Chronic Disease Activities in Local Health Departments Begun

In cooperation with the California Conference of Local Health Officers, the State Department of Public Health is undertaking a survey of chronic disease activities in local health departments. A large part of the statistical, health education, public health nursing, and other services of local health departments is being devoted to chronic disease. The purpose of the survey is to determine the extent of these services and how they might be improved. It will be conducted by members of the staff of the appropriate units of the State Department of Public Health in the course of their regular visits to local departments, thus minimizing the expenditure of time. A report will be prepared for each local health department and finally for the State as a whole.

Dr. Samuel J. Crumbine, oldest member attending the recent American Public Health Association convention in New York, shows Dr. Wilton Halverson, California State Director of Health, and 1953 president of the association, a trophy from his pioneering career in public health work.

Dr. Crumbine, among his many other crusades led the campaign to replace the common drinking cup, symbolized by this iron dipper which was used at Fort Scott, Kansas, for 100 years, with the modern sanitary paper cup. At the age of 92, Dr. Crumbine is still an active public health worker as consultant to the Public Health Committee of the Paper Cup and Container Institute, Inc.

First Phase of Lung Cancer Study Completed by Department

The Bureau of Chronic Diseases of the State Department of Public Health completed in October the first part of a study of causative factors in lung cancer. This investigation, supported by a research grant from the National Cancer Institute, demonstrated cigarette smoking to be an important factor in the development of lung cancer. In addition, the study disclosed that several occupations may be involved in causing the disease. These occupations include (1) welders and sheet metal workers doing welding; (2) steamfitters, boilermakers, asbestos workers; (3) electric bridge crane operators in metal industry; (4) occupations in the extraction of lead, zinc, and copper ore; (5) marine engineers, firemen, oilers, and wipers; (6) construction and maintenance painters; and (7) commercial cooks (excluding cannery cooks).

These findings were based upon interviews with more than 1,000 patients in nine California hospitals; half of the patients had lung cancer and the other half served as a control population.

This investigation has provided an approach to the control of what is now our most rapidly increasing disease. Even when the aging of our population is taken into account, mortality from lung cancer has quadrupled since 1930. It now causes more deaths in California than does tuberculosis.

The next phase of this study, now under way, is to determine specifically how great a risk of lung cancer is suffered by persons in the occupations listed above. For any occupation in which a particularly high risk is shown preventive measures will then be developed and a workable basis for control of lung cancer will be provided.

Professional Personnel Increases in Local Health Departments

The Bureau of Records and Statistics of the State Department of Public Health compiled during October a comparison of the number of full-time physicians, public health nurses, and registered sanitarians employed in California's local health departments and the number of vacancies in these positions over the past several years. This interesting comparison was done as an adjunct to the sixth annual survey of salaries paid full-time professional personnel in the local health departments of the State. These surveys are based on information submitted by the local health departments to the Division of Local Health Services in the fall of each year.

The current survey reveals that 10 more full-time physicians are now employed in local health departments than in 1952, and that physician vacancies are at the lowest level in several years. Public health nursing vacancies are also down somewhat. Public health nurses employed have increased by 169 or 21 percent over 1949. The number of sanitarians employed remains stable; however, it is estimated that there is a yearly turnover of between 50 and 75 employees.

	Oct. 1949 [a]	*Sept. 1951* [b]	*Nov. 1952* [c]	*Oct. 1953* [d]
Physicians employed	192	191	184 [e]	194
Physician vacancies	16	24	19	12
Public health nurses employed [1]	806	885	925	975
Public health nurse vacancies	101	93	94	84
Registered sanitarians employed	610	602	605	607
Registered sanitarian vacancies	18	18	25	27

[a] Fifty-one local health departments.
[b] Fifty-two local health departments.
[c] Fifty-three local health departments.
[d] Fifty-three local health departments (with the addition of El Dorado County and the combination of San Diego City and County).
[e] The decrease in full-time public health physicians employed in 1952 is largely accounted for by a change of 14 cliinc physician positions in the Los Angeles City Health Department from a full-time to an hourly basis.
[1] Includes only nurses holding the California public health nursing certificate.

Other Health Officer Changes

Santa Barbara County. Lauren F. Busby, M.D., succeeds Joseph T. Nardo, M.D.

Siskiyou County. Samuel E. Lamb, M.D., succeeds Charles A. Groomes, M.D.

Notice of Hearing

The State Board of Public Health will hold a public hearing on January 8, 1954, in Room 709, State Office Building, 217 West First Street, Los Angeles, to consider rescission of the hospital licensing requirements set forth in Sections 231 to 746 of the California Administrative Code, Title 17, Group 2, and adoption of revised regulations.

These proposed revisions will include a separation of the licensing requirements into two separate sections, one on construction and one on operation. Other changes relate to corridor widths, auxiliary power and lighting, special rooms, scrub-up facilities, nursing service and reports.

These changes have been reviewed by the State Hospital Advisory Board, the Council on Planning and Plant Operation of the California Hospital Association, the Hospital Committee of the California Council of Architects, the State Association of Nursing Homes, Sanitariums and Rest Homes, and various other agencies of the State.

Copies of the proposed revisions to these regulations are available for review in the offices of the State Department of Public Health in San Francisco and Los Angeles.

WILTON L. HALVERSON, M.D.
Executive Officer
State Board of Public Health

Dr. Frank Brewer Resigns to Accept Merced Post

A. Frank Brewer, M.D., Chief of the Bureau of Venereal Diseases since 1941, has resigned to accept the position of Merced County Health Officer and Superintendent of the Merced County Hospital. For the first time, the two county departments have been brought under one director.

His appointment became effective December 1st, following three months as health officer for Merced County, during which time he was on leave from the State Department of Public Health. Dr. Brewer joined the department in 1938. He has served as consultant on venereal disease control to the U. S. Public Health Service, and has authored a number of published articles on venereal disease.

Exam for Registered Sanitarian

February 10, 1954, has been set as the next examination date for registration as a sanitarian in California. The examination will be given in Berkeley and Los Angeles. Final date for filing is January 27th. Applications may be obtained from the Bureau of Sanitary Engineering, 2180 Milvia St., Berkeley 4.

Southern California Public Health Association Elects 1954 Officers

Edward Lee Russell, M.D., Orange County Health Officer, was elected president of the Southern California Public Health Association, a state affiliate of the American Public Health Association, at a meeting December 1st in Glendale. Dr. Russell succeeds James W. Moreland, San Bernardino City Health Officer.

The 1954 slate is as follows:

OFFICERS—1954

President: Edward Lee Russell, M.D., Health Officer, Orange County Health Department.

President-Elect: L. S. Goerke, M.D., Director Medical Services, Los Angeles City Health Department.

First Vice President: Agnes O'Leary, P.H.N., Asst. Professor, Public Health Nursing, U.C.L.A.

Second Vice President: A. Harry Bliss, Chairman, School of Public Health, U.C.L.A.

Secretary-Treasurer: Gerald A. Heidbreder, M.D., Chief, Division of V.D. Control, Los Angeles County Health Department.

Asst. Secretary-Treasurer: Donald Suggs, Public Health Engineer, Los Angeles County Health Department.

Immediate Past President and Rep. to Gov. Council, A.P.H.A.: James W. Moreland, M.D., Health Officer, San Bernardino City Health Department.

Representative to Regional Board, Western Branch, A.P.H.A.: Gerald A. Heidbreder, M.D.

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1954-55

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